

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

New claims 22-25 have been added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1 and 3-25 are now pending in this application. Claims 18 and 19 have been withdrawn from consideration.

Information Disclosure Statement

Applicants wish to thank the Office for providing a signed copy of the form PTO SB/08 that accompanied the Information Disclosure Statement filed on February 14, 2005. However, the Office did not initial references A4-A8 on the SB/08 form. The Office stated copies of these references were not provided or scanned in. For convenience, a copy of references A4-A8 are attached to this response. Applicants respectfully request that the Office provide a copy of a fully initialed SB/08 form with the next Office correspondence.

Rejection under 35 U.S.C. § 112

Claims 8 and 10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. This rejection is respectfully traversed. The claims have been amended to overcome this rejection. Withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. § 102

Claims 1, 3, 9, 11-13, 16, 17, 20, and 21 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,170,567 (hereafter "Nakada et al."). This rejection is respectfully traversed.

Amended claim 1 recites a heat exchanger, comprising a plurality of flat tubes which are arranged parallel to and at a distance from one another and via at least one end can be fed with a fluid (F) via a collection manifold, wherein the flat tubes being arranged at least partially in a positively locking manner in the collection manifold; wherein an outer contour, which represents the end of the respective flat tube, is at least partially matched to an internal contour which represents the collection manifold; and wherein the tubes are inserted into the collection manifold so that the outer contour of the respective flat tube is connected to the internal contour of the collection manifold. Claims 9, 11-13, 16, 17, 20, and 21 depend from claim 1.

Nakada et al. discloses a heat exchanger that includes oil channel members 2A composed of a pair of plates 20A, upper and lower side plates 3, and fins 5. See Nakada et al. at col. 7, lines 61-67; col. 8, lines 1-11. Nakada et al. discloses that a header is formed by a plurality of header members 4A, as shown in Figure 2. See Nakada et al. at col. 8, lines 45-47.

However, Nakada et al. does not disclose a heat exchanger, “wherein the tubes are inserted into the collection manifold so that the outer contour of the respective flat tube is connected to the internal contour of the collection manifold.” The plates 20A of Nakada et al. include holes 21 that communicate with header members 4A and the header members 4A include flat portions 41 that fit with plate portions 24 of the hole-defining edge of the plates 20A. See Nakada et al. at col. 8, lines 18-21, 47-54. In other words, the faces of the plates 20A and header members 4A are designed to mate with one another, as shown in Figures 1-4 of Nakada et al so that the outer contours of plates 20A are flush with the outer contours of header members 4A, thereby exposing the outer contours of plates 20A as an outer surface of the heat exchanger, as shown in Figures 1 and 4 of Nakada et al. Therefore, Nakada et al. fails to disclose all of the features of claim 1.

Amended claim 3 recites a heat exchanger, comprising a plurality of flat tubes which are arranged parallel to and at a distance from one another and via at least one end can be fed with a fluid (F) via a collection manifold, wherein the flat tubes being arranged at least partially in a positively locking manner in the collection manifold; wherein an outer contour,

which represents the end of the respective flat tube, is at least partially matched to an external contour which represents the collection manifold; and wherein the collection manifold is formed by a single collection manifold connected to all of the flat tubes.

As discussed above, Nakada et al. discloses a header that is formed by a plurality of header members 4A. See Nakada et al. at col. 8, lines 45-47. Therefore, Nakada et al. does not disclose all of the features of claim 3 because Nakada et al. fails to disclose a heat exchanger, “wherein the collection manifold is formed by a single collection manifold connected to all of the flat tubes.”

For at least the reasons discussed above, withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. § 103

Claims 14 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakada et al. in view of U.S. Patent No. 6,272,881 (hereafter “Kuroyanagi et al.”). This rejection is respectfully traversed. Kuroyanagi et al. fails to remedy the deficiencies of Nakada et al. and Kuroyanagi et al. discussed above in regard to independent claim 1, from which claims 14 and 15 depend. Withdrawal of this rejection is respectfully requested.

Furthermore, claim 14 recites a heat exchanger, “in which the end of at least one of the flat tubes is provided with a slot for receiving a partition wall; wherein the slot is formed in the outer contour of the respective flat tube that at least partially matches an internal contour which represents the collection manifold.” As noted by the Office on page 3 of the Office Action, Nakada et al. does not disclose a slot in a tube end.

Kuroyanagi et al. discloses a heat exchanger that includes tubes 42-45 connected to tank portions 8, 10, 11, 13. See Kuroyanagi et al. at col. 12, lines 20-37. The tank portions 8, 10, 11, 13 can include a partition wall 16 that fits within a slot formed by tubes 42-45, as shown in Figure 18. See Kuroyanagi et al. at col. 10, lines 36-40. However, Kuroyanagi et al. does not disclose that “the slot is formed in the outer contour of the respective flat tube that at least partially matches an internal contour which represents the collection manifold.”

Therefore, it would not have been obvious to combine the teachings of Nakada et al. and Kuroyanagi et al. to provide the heat exchanger of claim 14 because Nakada et al. and Kuroyanagi et al., alone or in combination, fail to disclose or suggest all of the features of claim 14.

New Claims

New claims 22-25 have been added. Claims 22-24 depend from claim 1 and are allowable over Nakada et al. and Kuroyanagi et al. for at least the reasons discussed above.

New claim 25 recites a heat exchanger, comprising a plurality of flat tubes which are arranged parallel to and at a distance from one another and via at least one end can be fed with a fluid (F) via a collection manifold, wherein the flat tubes being arranged at least partially in a positively locking manner in the collection manifold; and wherein an outer contour, which represents the end of the respective flat tube, is at least partially matched to an internal contour which represents the collection manifold; wherein the collection manifold is formed by a single collection manifold connected to all of the flat tubes.

As discussed above, Nakada et al. fails to disclose or suggest a heat exchanger, “wherein the collection manifold is formed by a single collection manifold connected to all of the flat tubes.” Nor does Nakada et al. disclose or suggest a heat exchanger, “wherein an outer contour, which represents the end of the respective flat tube, is at least partially matched to an internal contour which represents the collection manifold.” Furthermore, Kuroyanagi et al. fails to disclose or suggest a heat exchanger, “wherein an outer contour, which represents the end of the respective flat tube, is at least partially matched to an internal contour which represents the collection manifold.” Therefore, Applicants submit that claim 25 is allowable over Nakada et al. and Kuroyanagi et al.


Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 1/19/07

By 

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